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Via Electronic Filing

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Marlene H. Dortch
Secretary
Federal Communications Commission
445 12th St, SW
Washington, D.C. 20554

Re: Promoting Investment in the 3550-3700 MHz Band, GN Docket No. 17-258

Dear Ms. Dortch:

AT&T Services, Inc. ("AT&T") is filing this letter in response to the recent written *ex parte* of the Wireless Internet Service Providers Association ("WISPA").[1] In that *ex parte*, WISPA incorrectly asserts that a recent analysis by AT&T on the practical deployment difficulties engendered by Census Tract licensing in the 3550-3700 MHz band was "erroneous and misleading."[2] WISPA's argument rests on the incorrect assertion that Priority Access License ("PAL") holders will have a degree of certainty from the Spectrum Access System ("SAS") that allows them to mitigate the impact of small licensing areas and, effectively, aggregate up to larger regions. WISPA's assertion is incorrect and contradicted by the FCC's rules.

As WISPA itself states, "Section 95.21(b)(1)(i) states that '[a]n SAS . . . must assign geographically contiguous PALs held by the same Priority Access Licensee to the same channels in each geographic area, ***to the extent feasible***.'"[3] Notwithstanding this direct quote of the FCC regulations, WISPA then ignores the possibility that assigning a Priority Access Licensee the same channels in each geographic area may not, in fact, be "feasible." At present, the SAS coordinators are not even working on a channel assignment algorithm that would be capable of assigning the same channel to every contiguous PAL in a region. And there is good reason to believe that such an algorithm would be exceptionally difficult to create. As an initial matter, SASs are required to provide the same channels "in each geographic area," but that term is not defined. A licensee may desire a common channel across an aggregate PAL Protection Area ("PPA") comprised of a collection of Census Tracts, but that creates a "daisy chain" problem with other licensees that may desire to create aggregate PPAs that span different regions. Either the SASs will have to use some regional cut-offs or the problem will rapidly become

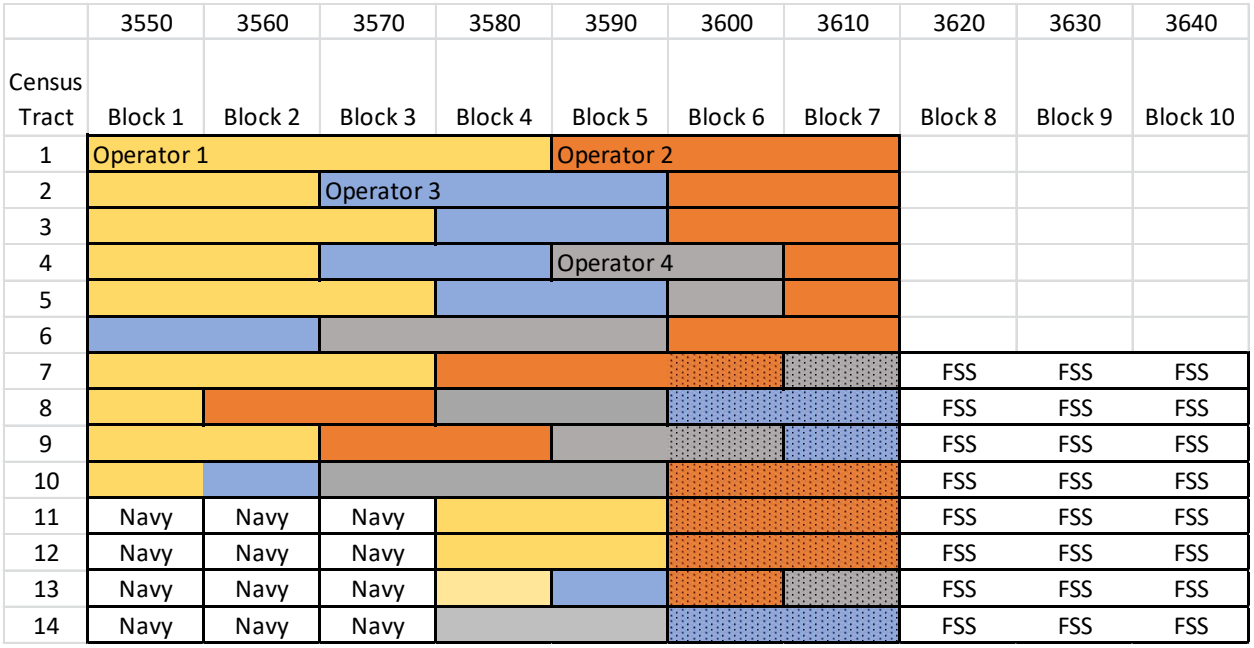
[1] Written *Ex Parte* Presentation of the Wireless Internet Service Providers Association, GN Docket No. 17-258 (filed Apr. 23, 2018) ("WISPA Letter").

[2] *Id*. at 1 (citing Letter from Stacey G. Black, to Marlene H. Dortch, FCC Secretary, GN Docket No. 17-258 (dated Apr. 5, 2018) ("AT&T Letter").

[3] *Id*. at 2 (emphasis added).

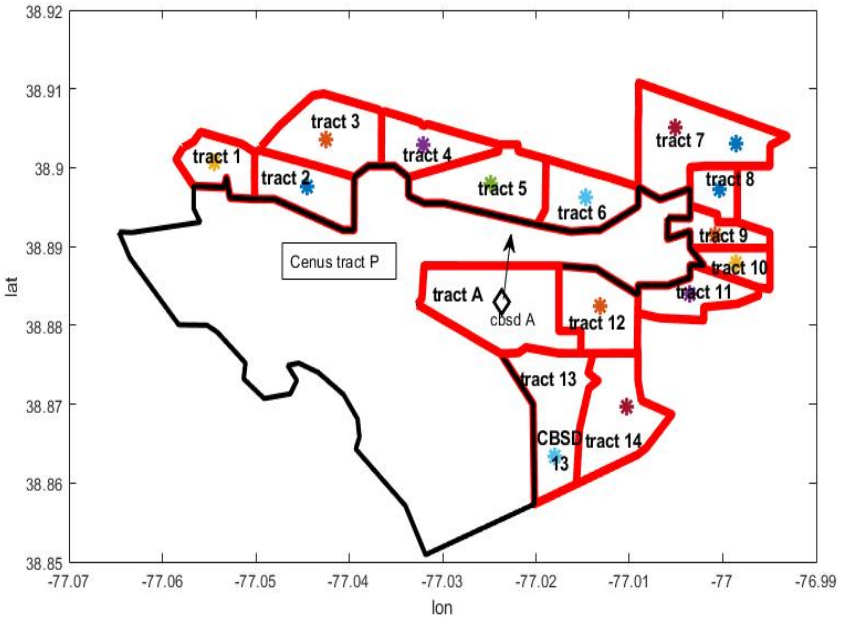
unmanageable. The standards will also have to define the processing effort required to determine feasibility, how channel assignments are made if a common channel is not feasible, and what happens when the assignments are impacted by dynamic events, such as a Navy radar initiating operation. There are also equities to consider and balance that are not simple—the lower channels are more subject to dynamic repacking because of Naval radars, and the upper channels are more subject to adjacent channel coordination issues resulting from grandfathered fixed satellite service operations.

Even if an algorithm could be developed to maximize common channel assignments to the satisfaction of all stakeholders, common channels cannot be guaranteed because of auction and incumbent issues in any event. And those problems get even worse when channel assignments are remapped because of dynamic events. In fact, as shown in the chart below, unless a licensee is able to secure the same number of channels in a region, which cannot be assured in an auction, there will have to be adjacent licensees that will limit contiguity. The chart shows fourteen Census Tracts and potential packing involving four operators, with the channel blocks arrayed horizontally and the Census Tracts vertically. The channel blocks in each Tract are color coded (by operator) to illustrate a set of SAS assignments that would achieve the required channel aggregation priorities, but also illustrate the difficulties with attempting to accommodate the common channel requirements:



Census Tract 1 illustrates a repacking undertaken by an SAS where one licensee has four PAL assignments and the other has three—in such a case, the SAS prioritizes spectrum contiguity to form larger channels. In Tract 2, the auction may have resulted in a third licensee obtaining PALs, with the result that Operator 1 and Operator 2 secure fewer PALs. In that case both Operator 1 and 2 will have adjacent market issues from Tract 1 requiring coordinating with Operator 3. In Tract 3, the number of PALs held by each operator is altered slightly, which will result in additional coordination requirements. In Tract 4, a fourth operator is introduced, creating further market boundary issues.

It should be noted that the market boundaries are not shown on the chart, but were derived from the Tract distribution used in AT&T's earlier ex parte:



Thus, Tract 2 will need to coordinate with both Tract 1 and Tract 3—and there will be other PAL licensees authorized in adjacent Census Tracts that are not shown. Tracts 5 and 6 show different distributions of PALs that could result from the auction and create further complications. In Tracts 7-14, we have also introduced a grandfathered FSS system in the upper band and, in Tracts 11-14, a Navy radar. Notably, where there is a grandfathered fixed satellite system, several adjacent channels may be affected and have to limit power—AT&T shaded certain channel blocks to indicate blocks where lower power may be required. That situation, in turn, raises the question of how the common channel requirement will work and how SASs will render fair results when not all channels are equivalent. In each of these scenarios, it should be recognized that complexities can result in the assignment of different channels to single operators and intractable problems for the SAS.

It should be evident that a number of situations exist whereby a PAL holder would not, in fact, receive the same channel in an adjacent market area, and therefore it is difficult to see how a PAL holder would be able to engage in rational network planning that is based on common channel deployment. When the situation becomes dynamic—by the introduction of a radar—a PAL holder may be required to displace its operations. That displacement might put it adjacent to itself, or might put it adjacent to another PAL or GAA operation that is wholly uncoordinated.

WISPA also makes the unwarranted assertion that co-channel protection for adjacent markets should not be an issue because "the signals from CBSDs whose service contours form the PPA would be treated as General Authorized Access ('GAA') outside of the PAL area."[4] The

[4] *Id*. at 3.

assumption here being that PAL holders could rely on being able to extend their service contours beyond their boundaries because an adjacent market licensee may not have extended their PPA to the boundary. But this is absurd—AT&T and other network operators cannot make network deployment decisions that are premised on not having to protect adjacent operations because they *might* not be deployed.[5] AT&T and others will need to assume that adjacent markets are robustly utilized by PAL (or GAA) licensees to the fullest extent possible. And AT&T's analysis has shown that such protection means retracting the potential scope of deployment well inside the market area boundaries—a result that makes small Census Tract licenses extremely onerous.[6]

WISPA then compounds its erroneous assertion by suggesting that PAL holders "are permitted to enter into agreements with other PAL holders to promote flexibility in their respective operations where, for instance, Census Tract boundaries do not conform to deployment or service objectives" and suggests AT&T (and other PAL holders) could enter into "service area boundary" ("SAB") agreements with adjacent licensees. But, given that AT&T could not assume that even though it holds PALs in two adjacent areas, it would be assigned a common channel, there is absolutely no rational suggestion that AT&T and a non-affiliated adjacent PAL holder could have any claim to being assigned the same channel. AT&T would not only have to execute a SAB with every adjacent licensee, it would also have to execute an SAB with every GAA licensee that could possibly be placed in the adjacent market. That is untenable.

In sum, "aggregated PALs" are not, and cannot be "treated as one PAL area."[7] And, even if they were, the logistical and practical issues with amassing a large PAL footprint in an auction are concerns. Without combinatorial bidding—which would be mathematically prohibitive to implement for a Census Tract scheme—licensees cannot guarantee their ability to secure large contiguous footprints. This leaves them potentially subject to stranded investments, if they cannot obtain the footprint they desire, but also cannot withdraw from all the markets they have bid on, and uneconomic bidding, including bidders that might attempt to secure PAL monopolies in areas for hold-up value.

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[5] In such regards, AT&T's assumption that adjacent market PPA contours reach the market borders is hardly a "fundamental misunderstanding of the Commission's rules," *id*. at 4. Adjacent PAL licensees have every right to deploy CBSDs so that their PPA is coextensive with the market boundary. AT&T therefore must assume that it may be required to protect a PPA that is coextensive with its market boundary—doing anything else could result in the adjacent licensee subsequently deploying additional facilities that would require AT&T to deconstruct. That is not a rational network build plan.

[6] Here WISPA makes unwarranted assumptions about how AT&T will deploy small cell PAL-based systems. WISPA makes the suggestion that "the low-power small cells that . . . AT&T [is] likely to deploy under their PALs have a typical service radius of only a few hundred meters," *id*. at 2. WISPA then concludes, based on that assertion, that AT&T's claims "would appear to impose no hardship on them," *id*. The deployments modeled by AT&T in the AT&T Letter are fully consistent with the type of small cells AT&T intends to deploy under PALs it obtains, and consistent with the overall industry themes seeking greater power and Category B limits. AT&T's modeling has determined that those cells would need to be 2-4 km from the market area boundaries to comply with PPA requirements, AT&T Letter at 11.

[7] WISPA Letter at 4.

AT&T believes, instead, that the compromise proposal recently advanced by Competitive Carriers Association ("CCA") and CTIA better balances rational network investment with the need to promote licensing among a variety of stakeholders.[8] CCA and CTIA have suggested that the FCC utilize "Metropolitan Statistical Area ('MSAs') in the top 306 Cellular Market Areas ("CMAs") and use county-based geographic area licenses in the remaining 428 CMAs."[9] AT&T believes this compromise creates an effective solution that at once recognizes the need for larger coordinated deployments in urban areas, while reducing the investment potentially required in the rural areas where WISPA asserts "coverage and connectivity to unserved Americans is desperately needed."[10] The boundary problems that would arise in over 56,500 Census Tracts in the top 306 CMAs seem much more difficult to resolve than partitioning or spectrum access issues arising in the less than 17,500 Census Tracts in the remaining 428 CMAs in the U.S.

Should any questions arise concerning this ex parte, please do not hesitate to contact the undersigned at (202) 457-2290.

Respectfully Submitted,

Stacey Black

[8] Letter from Rebecca Murphy Thompson, Executive Vice President and General Counsel, Competitive Carriers Association, and Scott K. Bergmann, Senior Vice President, Regulatory Affairs, CTIA, GN Docket No. 17-258 (filed Apr. 20, 2018).

[9] *Id*. at 1.

[10] WISPA Letter at 1.